

## WHAT IS CLAIMED IS:

1. A system for processing message traffic from a plurality of electronic discussion forums, comprising:

a message collector for collecting messages from the plurality of electronic discussion forums; and

means for processing the messages based on a series of topics in order to track a plurality of pseudonyms, wherein the processing includes computing a relevance score for a collected message based on at least one topic.

2. The system of claim 1, wherein the means for processing is further adapted to compute a buzz score based on a set of messages for the at least one topic.

3. The system of claim 2, wherein the buzz score measures posting activity level weighted by the relevance of the set of messages and the influence of posting pseudonyms that posted the set of messages.

4. The system of claim 2, wherein the buzz score is computed according to the equation:  $B$

$$= \sum_{i=1}^n (\text{Rel}_i \cdot F_i), \text{ where Rel is a computed relevance score for a message, F is a computed}$$

influence score for a poster of a message, and  $n$  is the number of messages in the set.

5. The system of claim 4, wherein the influence score is computed based on the equation:  $F$

$$= a \cdot \sum_{i=1}^m (\text{Rel}_i \cdot d_i) + b \cdot \sum_{i=1}^m (I_i \cdot d_i), \text{ wherein a and b are selectable weighting constants, Rel is the}$$

relevance of a message,  $I$  is the impact of a message,  $d$  is a decay function that reduces the impact of older messages, and wherein  $m$  is the number of messages used to compute the influence score.

6. The system of claim 5, wherein the decay function  $d$  is computed based on the equation:

$d = e^{\left(\frac{t_m - t}{\tau}\right)}$ , wherein  $t_m$  is the date and time a given message was posted,  $t$  is the current system date and time, and  $\tau$  is a configurable constant that controls the rate of decay.

7. The system of claim 6, wherein the impact  $I$  of a message is computed according to the

equation:  $I = \frac{|Pa - Pb|}{Pa + Pb}$ , wherein  $Pa$  is the number of unique pseudonyms that post a message

during time  $T$  after a message  $m$ ,  $Pb$  is the number of unique pseudonyms that post a message during time  $T$  before a message  $m$ , and wherein  $T$  is the amount of time it took for  $p$  unique pseudonyms to post a message before the current message, excluding the poster of  $m$ .

8. The system of claim 6, wherein the buzz score is computed as a relevant buzz score.

9. The system of claim 3, wherein the means for processing is adapted to compute a relative buzz score that measures relative changes in the posting activity level.

10. The system of claim 9, wherein the relative buzz score is computed as a function of an average of the buzz score and a standard deviation of the buzz score.

11. The system of claim 10, wherein the relative buzz score  $B_s$  is computed according to the equation:  $B_s = \frac{|B - avg(B)|}{std(B)}$ , wherein  $B$  is the present buzz score,  $avg(B)$  is the average of the

buzz score, and  $std(B)$  is the standard deviation of the buzz score.

12. The system of claim 11, wherein the relative buzz score is computed as a relevant relative buzz score.

13. The system of claim 1, wherein the means for processing is further adapted to compute an opinion rating for a collected message.

14. The system of claim 13, wherein the opinion rating is computed using a textual analysis software application.

15. The system of claim 14, wherein the textual analysis software application compares a content of the collected message with a plurality of known words and phrases indicative of expressions of an opinion.
16. The system of claim 13, wherein the computed opinion rating is a sentiment score.
17. The system of claim 16, wherein the sentiment score is a positive sentiment score.
18. The system of claim 17, wherein the means for processing is further adapted to compute an aggregate positive sentiment score for a set of collected messages.
19. The system of claim 18, wherein the aggregate positive sentiment score  $S_p$  is computed according to the equation:  $S_p = \sum_{i=1}^m s_{pm}$ , where  $m$  is the set of collected messages, and  $s_{pm}$  is a positive sentiment score for a message in the set of collected messages.
20. The system of claim 16, wherein the sentiment score is a negative sentiment score.
21. The system of claim 20, wherein the means for processing is further adapted to compute an aggregate negative sentiment score for a set of collected messages.
22. The system of claim 21, wherein the aggregate negative sentiment score  $S_n$  is computed according to the equation:  $S_n = \sum_{i=1}^m s_{nm}$ , where  $m$  is the set of collected messages, and  $s_{nm}$  is a negative sentiment score for a message in the set of collected messages.
23. The system of claim 16, wherein the sentiment score is a net sentiment score.
24. The system of claim 23, wherein the means for processing is further adapted to compute an aggregate net sentiment score for a set of collected messages.
25. The system of claim 24, wherein the aggregate net sentiment score  $S$  is computed according to the equation:  $S = \sum_{i=1}^m (s_{pm} - s_{nm})$ , where  $m$  is the set of collected messages,  $s_{pm}$  is a

positive sentiment score for a message in the set of collected messages, and  $s_{nm}$  is a negative sentiment score for the message.

26. A system for processing messages from a plurality of electronic discussion forums, comprising:

a message collector for collecting messages from the plurality of electronic discussion forums; and

means for processing the messages based on a series of topics in order to track a plurality of pseudonyms, wherein the processing includes computing a relevance score for a collected message based on at least one topic, and wherein the processing includes computing a buzz score for a set of collected messages.

27. The system of claim 26, wherein the means for processing is further adapted to compute a migration score based on the set of messages.

28. The system of claim 27, wherein the migration score provides a measurement of the movement of posting activity levels between topics or groups of topics from the series of topics.

29. The system of claim 27, wherein the migration score provides a measurement of the movement of posting activity levels between topics or groups of topics from the series of topics that is weighted by influence scores of posting pseudonyms.

30. The system of claim 29, wherein the migration score includes an indication of direction of the movement.

31. The system of claim 29, wherein the migration score is computed based on a change in buzz levels.

32. The system of claim 31, wherein the migration score is computed based on the equation:

$M_n = [B_n - B_{n-1}]$ , wherein  $B_n$  is the buzz level for day  $n$  and  $B_{n-1}$  is the buzz level for the previous day.

33. A system for tracking message activity levels in a plurality of electronic discussion forums, comprising:

a database storing a series of topics, wherein each of the electronic discussion forums is associated with at least one topic from the series of topics;

a message collector for collecting messages from the plurality of electronic discussion forums; and

a message categorizer for computing relevance scores of the messages, wherein at least one relevance score is computed based on the at least one associated topic for a source forum of a collected message.

34. The system of claim 33, wherein the database comprises a table that links forums to associated topics.

35. The system of claim 33, wherein the at least one relevance score comprises multiple relevance scores corresponding to multiple associated topics, and wherein the highest relevance score is maintained and the other relevance score or scores are discarded or ignored.

36. The system of claim 33, wherein at least one of the message collector and message categorizer is adapted to extract a pseudonym author of the collected message.

37. The system of claim 36, wherein the extracted pseudonym author is analyzed to determine if the extracted pseudonym author is a new author or a previously-tracked author.

38. The system of claim 37, wherein the determination is made by comparing the extracted pseudonym author to an author's table that stores a plurality of previously-tracked authors.



48. The system of claim 43 or claim 44, wherein the group of topics corresponds to a market sector, and wherein the buzz score or the relative buzz score is computed by aggregating the buzz scores for the stocks making up the sector.
49. The system of claim 43 or claim 44, wherein the series of topics includes a plurality of movies or a plurality of television shows.
50. The system of claim 44, wherein the relative buzz score is compared to an anomaly threshold in order to identify unusual discussion patterns.
51. The system of claim 43, wherein at least one of the message collector and the message categorizer is adapted to compute a migration score for the topic or the group of topics, and wherein the migration score is computed based on a change in buzz scores for the topic or group of topics.
52. A method for processing message traffic from a plurality of electronic discussion forums, comprising the steps of:
  - collecting messages from the plurality of electronic discussion forums; and
  - processing the messages based on a series of topics in order to track a plurality of pseudonyms, wherein the processing step comprises computing a relevance score for a collected message based on at least one topic.
53. The method of claim 52, wherein the processing step further comprises the step of computing a buzz score based on a set of messages for the at least one topic.
54. The method of claim 53, wherein the buzz score measures posting activity level weighted by the relevance of the set of messages and the influence of posting pseudonyms that posted the set of messages.

55. The method of claim 53, wherein the buzz score is computed according to the equation:  $B$

$$= \sum_{i=1}^n (\text{Rel}_i \cdot F_i), \text{ where Rel is a computed relevance score for a message, F is a computed}$$

influence score for a poster of a message, and  $n$  is the number of messages in the set.

56. The method of claim 42, wherein the influence score  $F$  is computed based on the

$$\text{equation: } F = a \cdot \sum_{i=1}^m (\text{Rel}_i \cdot d_i) + b \cdot \sum_{i=1}^m (I_i \cdot d_i), \text{ wherein a and b are selectable weighting}$$

constants, Rel is the relevance of a message,  $I$  is the impact of a message,  $d$  is a decay function that reduces the impact of older messages, and wherein  $m$  is the number of messages used to compute the influence score.

57. The method of claim 56, wherein the decay function  $d$  is computed based on the

$$\text{equation: } d = e^{\left(\frac{t_m - t}{\tau}\right)}, \text{ wherein } t_m \text{ is the date and time a given message was posted, } t \text{ is the current}$$

system date and time, and  $\tau$  is a configurable constant that controls the rate of decay.

58. The method of claim 57, wherein the impact  $I$  of a message is computed according to the

$$\text{equation: } I = \left| \frac{Pa - Pb}{Pa + Pb} \right|, \text{ wherein } Pa \text{ is the number of unique pseudonyms that post a message}$$

during time  $T$  after a message  $m$ ,  $Pb$  is the number of unique pseudonyms that post a message during time  $T$  before a message  $m$ , and wherein  $T$  is the amount of time it took for  $p$  unique pseudonyms to post a message before the current message, excluding the poster of  $m$ .

59. The method of claim 57, wherein the buzz score is computed as a relevant buzz score.

60. The method of claim 54, wherein the means for processing is adapted to compute a relative buzz score that measures relative changes in the posting activity level.

61. The method of claim 60, wherein the relative buzz score is computed as a function of an average of the buzz score and a standard deviation of the buzz score.



62. The method of claim 61, wherein the relative buzz score  $B_s$  is computed according to the

equation:  $B_s = \frac{|B - \text{avg}(B)|}{\text{std}(B)}$ , wherein B is the present buzz score,  $\text{avg}(B)$  is the average of the

buzz score, and  $\text{std}(B)$  is the standard deviation of the buzz score.

63. The method of claim 62, wherein the relative buzz score is computed as a relevant relative buzz score.

64. A method for processing messages from a plurality of electronic discussion forums, comprising the steps of:

collecting messages from the plurality of electronic discussion forums; and

processing the messages based on a series of topics in order to track a plurality of pseudonyms, wherein the processing step comprises computing a relevance score for a collected message based on at least one topic, and wherein the processing step comprises computing a buzz score for a set of collected messages.

65. The method of claim 64, wherein the processing step further comprises computing a migration score based on the set of messages.

66. The method of claim 65, wherein the migration score provides a measurement of the movement of posting activity levels between topics or groups of topics from the series of topics.

67. The method of claim 65, wherein the migration score provides a measurement of the movement of posting activity levels between topics or groups of topics from the series of topics that is weighted by influence scores of posting pseudonyms.

68. The method of claim 66, wherein the migration score includes an indication of direction of the movement.

69. The method of claim 66, wherein the migration score is computed based on a change in buzz levels.

70. The method of claim 69, wherein the migration score is computed based on the equation:  

$$M_n = [B_n - B_{n-1}]$$
, wherein  $B_n$  is the buzz level for day  $n$  and  $B_{n-1}$  is the buzz level for the previous day.

71. The method of claim 64, wherein the processing step further comprises computing an opinion rating for a message in the set of messages.

72. A method for tracking message activity levels in a plurality of electronic discussion forums, comprising:

storing a series of topics in a database, wherein each of the electronic discussion forums is associated with at least one topic from the series of topics;

collecting messages from the plurality of electronic discussion forums; and

computing relevance scores of the messages, wherein at least one relevance score is computed based on the at least one associated topic for a source forum of a collected message.

73. The method of claim 72, further comprising the step of linking forums to associated topics in a table in the database.

74. The method of claim 72, wherein the at least one relevance score comprises multiple relevance scores corresponding to multiple associated topics, and wherein the highest relevance score is maintained and the other relevance score or scores are discarded or ignored.

75. The method of claim 72, further comprising the step of extracting a pseudonym author of the collected message.

76. The method of claim 75, further comprising the step of analyzing the extracted pseudonym author to determine if the extracted pseudonym author is a new author or a previously-tracked author.

77. The method of claim 76, wherein the determination is made by comparing the extracted pseudonym author to an author's table that stores a plurality of previously-tracked authors.
78. The method of claim 75 further comprising the step of computing an influence score for the extracted pseudonym author.
79. The method of claim 78, wherein the influence score is based at least in part on the impact of prior postings by the extracted pseudonym author on other pseudonym authors.
80. The method of claim 78, further comprising the step of computing a reputation score for the extracted pseudonym author.
81. The method of claim 80, wherein the reputation score is based on a plurality of influence scores for the extracted pseudonym author under multiple local pseudonyms that have been associated into a universal pseudonym.
82. The method of claim 78, further comprising the step of computing a buzz score for a topic or group of topics from the series of topics.
83. The method of claim 82, further comprising the step of computing a relative buzz score for the topic or the group of topics.
84. The method of claim 82 or claim 83, wherein the electronic discussion forums comprise the Raging Bull, Motley Fool, Silicon Investor, and Yahoo forums.
85. The method of claim 82 or claim 83, wherein the series of topics includes stocks comprising at least one of the following indices: NASDAQ 100, Dow Industrials 30, and the S&P 500.
86. The method of claim 82 or claim 83, wherein the group of topics corresponds to a stock index, and wherein the buzz score or the relative buzz score is computed by aggregating the buzz scores for the stocks making up the stock index.

87. The method of claim 82 or claim 83, wherein the group of topics corresponds to a market sector, and wherein the buzz score or the relative buzz score is computed by aggregating the buzz scores for the stocks making up the sector.

88. The method of claim 82 or claim 83, wherein the series of topics includes a plurality of movies or a plurality of television shows.

89. The method of claim 83, wherein the relative buzz score is compared to an anomaly threshold in order to identify unusual discussion patterns.

90. The method of claim 82, further comprising the step of computing a migration score for the topic or the group of topics, and wherein the migration score is computed based on a change in buzz scores for the topic or group of topics.